

REMARKS

Claims 1, 2, 4, 5 and 7-12 are pending in this application. Claims 11 and 12 have been canceled.

This is a response to the Examiner's Final Office Action mailed April 17, 2003. Upon entrance of the above amendments, claims 11 and 12 will be cancelled and claim 4 will be amended. It is believed to be proper that these amendments be entered to put this application in condition for allowance or in better condition for appeal.

EXAMINER'S HOLDING OF NEW MATTER

In response to the Examiner's holding of new matter, Applicant points out that depositing of the nitride and oxide films over a substrate, as generally recited in claims 1, 4, 11 and 12, is described in the specification of this application on page 7, lines 3-5, and shown in Fig. 2A. Although the nitride and oxide films 103, 104 are separated from the substrate 110 by insulating film 101 and contact plug 102, they may still be characterized as deposited "over" the substrate, just as any one of several layers of paint applied to a piece of wood may be characterized as deposited over the piece of wood. Accordingly, Applicant respectfully request that the Examiner withdraw the holding of new matter.

DRAWING OBJECTIONS

The Examiner has objected to the drawings, stating that claim 1, line 2 recites the limitation "depositing a conductive layer on the substrate", which is not depicted. In response, Applicant submits that claim 1 does not anywhere include the limitation referred to by the Examiner. However, claim 1, *line 7* recites "depositing a conductive layer *over* the substrate" (emphasis added). This feature is illustrated in FIG. 2C. Withdrawal of the objection to the drawings and approval of the revised formal drawings filed September 19, 2002, are, therefore, respectfully requested.

CLAIM REJECTIONS - 35 U.S.C. §112

Claims 1, 2, 4, 5 and 7-12 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed.

Full support for depositing a nitride film and an oxide film over a substrate can be found in the specification, for example in paragraph on page 7, in the second paragraph, and Fig. 2B, which disclose "...a nitride film 103 is deposited on interleaving insulating film 101 including the contact plug 102, and an oxide film 104 is deposited on the nitride film 103...".

CLAIM REJECTIONS - 35 U.S.C. §103

Claims 1, 2, 4, 5 and 7-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's admitted prior art (1A-1E) in view of Wong et al. (U.S. Patent 6,372,150). This rejection is respectfully traversed.

It is respectfully submitted that the combinations of the steps set forth in independent claims 1 and 4 are not disclosed or made obvious by the prior art of record, including Applicant's related art and Wong.

The Final Office Action relies on Wong for a teaching of a water-vapor plasma etching of metal surfaces covered with an organic material, such as a photoresist. However, Wong does not teach or suggest all limitations of claims 1 and 4 and, therefore, fails to cure the deficiencies of Applicant's related art.

The Final Office Action goes on to allege that Wong discloses a water vapor plasma etching of metals surfaces that facilitates a removal of organic residues or films by plasma etching metal surfaces covered with an organic material such as photoresist. Applicant respectfully disagrees.

While the Final Office Action relies on Wong for teaching of a water-vapor plasma etching of metal surfaces covered with an organic material, such as a photoresist, Applicant respectfully submits that Wong never teaches or suggests the use of non-reactive etching gas with respect to the lower electrode, wherein the etching gas is one of H₂O, a mixture of H₂ and O₂ in which an amount of H₂ is

smaller than an amount of O₂, a mixture H₂O, NH₃, and N₂, a mixture of N₂ and NH₃, a mixture of NH₃ and H₂O, and a mixture of N₂ and H₂O.

Furthermore, referring to col. 4, lines 8-19 of Wong, Wong cited that water vapor plasma etches benefit from the addition of a source of oxygen, such as O₂, and the flow rate ratio of H₂O to O₂ is at least about 5:2, but is less than or equal to about 20:1, and more preferably is about 5:1. However, referring to page 3, lines 13-14 of the present invention, the present invention indicated the following problem; "Ru or RuO₂ of the lower electrodes 16a reacts with O₂ gas so that a volatile gas of RuO₄ is generated. For this reason, the electrodes 16a may be damaged". Also, referring to page 4, lines 1-3 of the present invention, the present invention indicated the following problem; "When the photoresist used as a mask to form the lower electrode of Ru or RuO₂ is removed by O₂ plasma gas, O₂ gas chemically reacts with the lower electrode. As a result, the lower electrode is damaged, thereby reducing process yield".

Accordingly, Applicant respectfully asserts that Wong includes the above-described problem indicated by the present invention and teaches away.

Applicant respectfully asserts that the rejection under 35 U.S.C. §103(a) should be withdrawn because the applied references, whether taken singly or combined, do not teach or suggest each and every feature of independent claims 1 and 4. MPEP §2143.03 instructs that "to establish prima faces obviousness of a

claimed invention, all the claim limitations must be taught or suggested by the prior art.

In view of the foregoing, reconsideration and withdrawal of the rejection of claims 1 and 4 are respectfully requested. With regard to the dependent claims, these claims depend directly or indirectly from allowable independent claims 1 and 4 and are, therefore, allowable for at least the same reasons as above, as well as for the additional limitations provided by these claims.

CONCLUSION

In light of the above amendments and remarks, Applicant submits that claims 1, 2, 4, 5 and 7-10 currently presented are in condition for allowance. Accordingly, Applicant respectfully requests that Examiner pass this case to issue. If Examiner believes that personal contact with Applicant's representative would expedite prosecution of the application, he is invited to call the undersigned at his convenience.

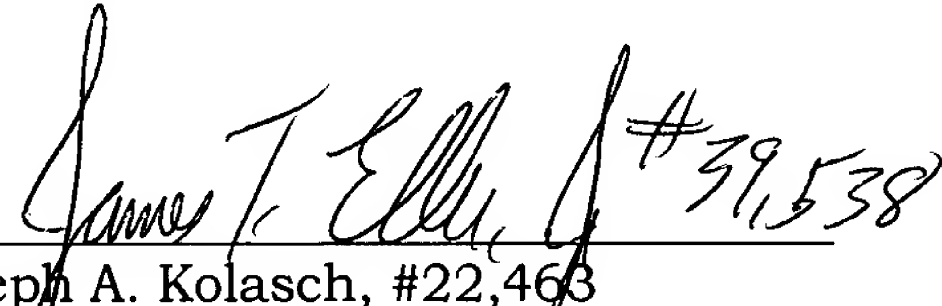
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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